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## TIERRA DEL FUEGO AND THE SAHARA.

[A Communication addressed to the President of the American Geographical Society by MR. E. REUEL SMITH, of New York.]

THE interesting notes which follow relate to the climate and physical conditions of Tierra del Fuego and the Sahara, and are taken, for the most part, from Molina's *Saggio sulla Storia Naturale del Chili*, and from the work of Gen. Daumas, *Le Grand Désert*. They were submitted in a more extended form to President Daly, as illustrative of the passages in his Annual Address which treat of those widely separated regions, and he has now, with the writer's consent, kindly furnished them for publication.

In a note, p. 33, lib. I., of the Italian edition (1782), Molina says :

"The opinion concerning the excessive cold of the southern extremity of America is so strongly established that it would seem like temerity to wish to contradict it.

"Nevertheless, allow me to propound certain doubts in regard to a point so universally admitted. Commodore Byron, at the very time that he is comparing the temperature of the Magellanic summer to the mid-winter climate of England, describes the region as follows : 'All that point (Sandy) is covered with wood ; we found springs of fresh water, and the trees and verdure offered for a distance of four or five miles a very agreeable prospect.'

"'Beyond the point the country is level and appar-

ently fertile; the ground was covered with flowers, which filled the air with a delicious perfume. We found a prodigious quantity of seeds of different kinds. . . . In the midst of this smiling prairie enamelled with an infinity of flowers appeared many hundreds of birds . . . of brilliant plumage. . . . We passed for twelve miles along the borders of this beautiful country, etc. . . . The banks of the Sedger are clothed with large and superb trees, and I doubt if any taller can be found. Among them are some of more than eight feet in diameter, which is more than twenty-four feet in circumference.

“‘Pepper and cinnamon (Wintereana) are here very common. These fine trees, despite the rigors of the climate, were enlivened by the presence of innumerable flocks of parrots and other birds of magnificent plumage. . . .

“‘From this port (Famine) to Cape Forward (about four leagues) the country is as pleasing as possible . . . in places covered with flowers in no way inferior to those cultivated in our gardens, either in variety, color, or fragrance.’” Voy. of Hawkesworth, Tom. I., Chap. 4.

The foregoing refers to the northern shore of the Straits . . . and Molina continues:

“This description is true, and conforms to the accounts of other voyagers in these parts. But could so exuberant and so smiling a vegetation ever exist in a climate so excessively cold? Would the parrot, so fond of warmth, voluntarily remain in a clime condemned to a perpetual winter?

“If, then, the summer is so rigid as to be compared to the midwinter of England, what idea must we form of the Magellanic winters?

"But the cinnamon is found in abundance not only on the northern shore of the Straits, but, according to Cook in his Second Voyage, in Tierra del Fuego, where (though unable to resist the winters of England) it thrives prodigiously under the open sky. . . I do not question the truth of the misfortune that befel Banks and his crew in Tierra del Fuego, but this isolated fact is not sufficient to establish a theory. . . The crew of the *Concepcion* passed an entire winter there in 1766 without any such disaster." And he concludes :

"The Emperor Julian spoke of the climate of France, then wooded and uncultivated, in the same terms now used to describe the cold of the Magellanic regions."

I have not attempted (says Mr. Smith) to verify the quotations given by Molina, but in Capt. Cook's Second Voyage, under date 29 Dec., 1774, I find :

"We steered for Le Maire's Strait, between Tierra del Fuego and Staten Island. . . Here the land sloped down from the hills into long level points covered with tall forests, and no snow was to be seen except on the distant western mountains. We entered the Straits the next morning, but were becalmed. . . Success Bay lay open to our eyes, and the country about it looked so rich and fertile that we heartily wished to make some stay there."

Elsewhere Molina speaks of his personal experience :

"I myself in June, 1768, navigated those waters as far as latitude 61° S., without finding the slightest indication of freezing, and, though it snowed with much frequency, the cold did not exceed what we are accustomed to feel in Bologna during the winter season."

Mr. Smith's recollections of the voyage round Cape

Horn confirm this report; and his inquiries during a visit to Algeria in 1855 led him to entertain the opinion that the Great Desert was not a waste of sand.

Arabs who had frequently crossed to the country of the Blacks, assured him that for several months in the year the Sahara abounded with pasture, which disappeared only in the summer heats. The sandy tracts, it was even then well known, formed an exception to the general character of the soil, which possessed every element of fertility but water.

Mr. Smith quotes from Gen. Daumas (*Le Grand Désert*, Paris, 1856), several statements to the same effect, and makes an abstract of the itinerary of a Tuareg slave-dealer to the Kingdom of Haoussa, as given in detail to Gen. Daumas. The journey, begun in September, lasted, with intervals of delay for slave-hunting, until the following March, the actual time on the road being set down at fifty-four days. Pasture was found almost every day, and there were but nine days when water was not to be had. Sand is mentioned on eleven of the travelling days. The party constantly met with encampments of tribes with their camels, asses, sheep and goats. Game, such as gazelles, hares, rabbits, partridges, etc., abounded in many places; and in the mountains, which the caravan had frequently to cross, there were many trees, and the rain sometimes fell in torrents. There were towns along the route with groves of date palms, and gardens full of fine fruits and vegetables.